



Republic of Namibia



African Development Bank

## MINISTRY OF EDUCATION, ARTS AND CULTURE

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### EDUCATION AND TRAINING QUALITY IMPROVEMENT PROJECT (ETQIP)

### **Environmental and Social Management Plan (ESMP) for Renovations and Upgrading of Ernst Jagger Combined School in //Kharas Region**



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## **Acknowledgements**

The Environmental and Social Management Plan for Ernst Jagger Combined School is compiled from the Scope of Work, Civil and Structural Assessment Report as well as the Environmental, Social Management Plan Guidelines from the Africa Development Bank (AfDB) and various Environmental Assessment Reports and Management Plans that were prepared for the Ministry of Education, Arts and Culture (MoEAC) for the construction and renovations of education infrastructures. The content herein covers most of the general environmental and social issues identified in the Civil and Structural Assessment and the Individual Procurement Plan for the Renovations and Upgrading of Ernst Jagger Combined School.

## TABLE OF CONTENTS

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General information .....	6
PROJECT DESCRIPTION.....	6
Objectives and Legal Obligation .....	21
OBJECTIVE OF THE ENVIRONMENTAL MANAGEMENT PLAN.....	21
Legal Obligation .....	21
Responsibilities and monitoring program.....	22
The Project Environmental Consultant/Specialist.....	22
Principal Agent (PA).....	23
Environmental, Health and Safety Control Officer (EHSCO) .....	23
The Contractor.....	24
PROCEDURES FOR CORRECTING NON-COMPLIANCE .....	25
Fines and penalties.....	27
FINES.....	27
PENALTIES .....	28

## **ABBREVIATIONS & ACCRONYMS**

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AfDB	African Development Bank
AIDS	Acquired Immune Deficiency Syndrome
EHSCO	Environmental, Health and Safety Control Officer
EMP	Environmental Management Plan
ESAF	Environmental and Social Assessment Framework
ESMP	Environmental and Social Management Plan
ETQIP	Education and Training Quality Improvement Project
GRN	Government of the Republic of Namibia
HPP	Harambee Prosperity Plan
MoEAC	Ministry of Education, Arts and Culture
PCP	Public Consultation Plan
PA	Principal Agent
TVET	Technical and Vocational Education and Training
VTC	Vocational Training Centre
UNAM	University of Namibia
JSS	Junior Secondary School

## **General information**

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### **PROJECT DESCRIPTION**

The Government of Namibia (GRN) through the Ministry of Education, Arts and Culture (MoEAC) is implementing the Education and Training Quality Improvement Project with financial support from the African Development Bank (AfDB). The Project seeks to contribute to Namibia's national goals and targets set in the fifth National Development Plan (NDP5) as well as reducing poverty and youth unemployment as stated in the Harambee Prosperity Plan (HPP). The Project is expected to contribute to increasing access, attaining equity and improving quality of education and technical, vocational education and training in Namibia. The Project will be implemented over a period of 5 years and it became effective on 28 March 2018.

Ernst Jagger Combined School in the //Kharas Region has been identified as one of the five (5) additional schools to benefit from the AfDB financial assistance (Government Loan) to the value of N\$ 17,500,000.00 including Value Added Tax. The school has a population of 763 learners of which 412 are boys, and 352 girls and 36 teachers and administration staff.

The scope of work for Ernst Jagger Combined School is as follows:

a) General Construction Works

- *Establishment of contractor's camp, equipment and other site facilities;*
- *Confirming existing natural ground levels and design levels;*
- *Trimming and finishing –off the site upon completion of works.*

***1x Existing Boys Hostel Block and 1x Existing Girls Hostel Block***

Building Works

- *Removal of existing floor finishes and replace with new finish;*
- *Install new IBR ceilings;*
- *Removal of existing timber door and replace with new steel/timber doors;*
- *Removal of existing IBR roof coverings and replace with Kliplok sheets;*

- *Fill in cracks, plaster and repaint existing and new walls; and*
- *Removal of sanitary fixtures and replacing with new; and*
- *Removal of sanitary fixtures and replacing with new.*

#### Mechanical Works

- *The installations of solar water heater;*
- *The water storage and pump installation;*

#### *External Works*

##### **Water Infrastructure:**

- *Laying and placing of water pipework;*
- *Construction of water tower including all concrete and steel works;*
- *Installation of water storage tanks;*
- *Construction of bedding;*
- *Backfilling pipe trenches; and*
- *Cleaning and finishing-off waterline route.*

#### Sewer reticulation infrastructure works:

- *Flushing of the existing sewer network system;*
- *Clearing and grubbing (where required);*
- *Removal of tree and tree stumps (where required)*
- *Construction of sewer manholes (where required)*
- *Construction of new sewer pipework (where required)*

#### Electrical Works

- *Excavations for underground cables;*
- *Installation of LT Cable*
- *The supply and installations of galvanised draw wire;*

- *The supply and installation of building earth rods; and*
- *The supply and installation of distribution board earths.*

In order to maximise the benefits to be accrued as a result of the proposed project in terms of increasing access, attaining equity and improving the quality of Basic Education and TVET in Namibia, an Environmental and Social Management Plan (ESMP) has been prepared to identify the environmental and social management and mitigation actions required to address any potential adverse impacts and to implement the project in accordance with the requirements of the Environmental Management Act No. 07 of 2007 and AfDB environmental and social policies. The ESMP provides an overview of the environmental and social baseline conditions on the direct impacts' areas, summarizes the potential impacts associated with the proposed project and sets out the management measures required to prevent, minimise or mitigate any potential adverse environmental and social impacts, and enhance the Project's beneficial impacts.

The site specific Environmental and Social Management Plan which is an extraction of mitigation measures from the AfDB ESMP and other environmental plans developed for the Ministry of Education, Arts and Culture have described specific environmental and social information and mitigation measures proposed that should be complied with during the renovations and upgrading of Mavuluma JSS.

The site specific ESMP elaborates on practical measures that need to be taken to ensure that potentially negative impacts on the environment (ecological and social) are minimized or completely avoided, whilst the positive impacts are maximized. The ESMP covers all aspects of the project life cycle, including the planning, construction, and operational phase of the project.

## **MAJOR ENVIRONMENTAL AND SOCIAL IMPACTS AND CLIMATE CHANGE RISKS**

The Education and Training Quality Improvement Project has been classified as a category 2 according to the African Development Bank (AfDB)'s Environmental and Social Assessment Procedures (ESAP), which means that all known environmental and social risks can be minimised and managed through implementing preventative measures and sound management systems.



## **POSITIVE IMPACTS**

The main positive impacts anticipated from the project are enhanced access to affordable technical skills; and improvement of quality of life of learners, students and staff alike, due to the provision of adequate and modern education infrastructure (i.e. classrooms, workshops, accommodation facilities, sanitation services etc.). The project is expected to provide job opportunities to local communities of which at least 80% are expected to be unskilled and semi-skilled people, and can be sourced from the unemployed labour force of the local communities. The local economy of the project location is expected to benefit from the projects, as the moneys spent in communities around the project locations would create substantial flows of revenue within these communities, thus acting as catalyst for growth in the local economy. Goods and services procured from local business or enterprises will also increase the projects contribution to the growth of the local economy.

## **NEGATIVE IMPACTS**

Clearing of vegetation during earthworks is expected to take place at some project sites and can make these sites susceptible to soil erosion, especially during rainy seasons. The constant movement of heavy construction vehicles during construction also tend to compact the lane surface, which can reduce infiltration capability, and increase surface water runoff. The use of heavy construction machineries and increased traffic at the project site during the construction can result in soil compaction, which increases run-off capacity of the soil at the site. Waste material will be generated during the construction of the proposed development. Waste in the form of rock cuttings, pipe cuttings, electrical cuttings, oil spills or leakages of petroleum products might occur during the construction phase. Contamination of soil, groundwater and surface water might occur through petroleum, chemical, harmful and hazardous substances. Contaminants in the form of oil leakages, diesel, lubricants and grease from the construction equipment and machinery during the construction phase may occur. Care must be taken to avoid contamination of soil and groundwater.

Dust and waste materials will be generated during the construction phase. Dust problems are expected to be site specific and will not pose a nuisance to any neighbouring land; however, it might be worse during the winter months when strong winds occur. Earthmoving equipment will be utilised during the construction phase and noise would be generated. No known heritage artefacts or areas envisaged to be impacted by the development. Waste in the form of rock cuttings, pipe cuttings, electrical cuttings, oil spills or leakages of petroleum

products might occur during the construction phase. Safety and security issues could arise from the earthmoving equipment and tools that will be used on site during the construction activities. This increases the possibility of injuries. The presence of construction could also encourage criminal activities. Open flames, smoking or any potential sources of ignition are potential threats to health and safety, especially in areas where highly flammable materials are stored on the premises.

No resettlement is expected at this stage. The basic education project sites are already operating as primary, secondary and high schools. The proposed improvements to be conducted are all to take place within the confines and boundaries of the respective schools. Any expansions to be conducted are within land earmarked for this purpose. No encroachment on the neighbouring land or properties will occur and no resettlement of individual(s) or communities is required for this project. Cumulative impacts associated with the Basic Education and TVET Infrastructure improvements are expected to include, noise emissions, land disturbance, traffic and possible accidents involving vehicles frequenting the area. This could collectively impact on the environmental conditions in the area. Cumulative impacts could occur in both the operational and the construction phase.

In general, impacts are expected to be low to medium, mostly short lived and site specific. Mitigation options recommended in the Environmental and Social Management Plan (ESMP) will guide and ensure that the impacts of the construction work are minimised. The development of the ESMP has been informed by, and in line with, the AfDB's Integrated Safeguards System (ISS) (2013).

## **ENHANCEMENT/MITIGATION MEASURES AND COMPLIMENTARY INITIATIVES**

Where negative impacts arise, mitigation will include measures enumerated in Tables 1 below. In terms of enhancement measures proposed under the project, the design of TVET and some of the schools will be informed by the innovative designs that strive to address environmental, social and climate issues. The new building are planned to incorporate renewable energy as a source of power. Two of the project sites lie in the areas with high irradiation in the country, making it very viable to use solar for power. This could save the institutions cost of power, and at the same time students of TVETs will have a platform to practice renewable energy innovation, particularly the electrical courses students. Some

projects will be having waste water treatment plants, which will treat water to acceptable standards for gardening and reuse in flushing of toilets and washing of floors or holding pens. This could improve water use at the schools, and reduce the water bills significantly, and the treated water could be used by both the students and the nearby communities with gardens. The rehabilitation of schools under the basic education must include renewable energy and water use efficiency mechanisms, in order to reduce costs and ultimately reduce the impact on the environment by reducing additional pressure on power and water demand.

**Table 1: Environmental and Social Impacts Mitigation Plan**

<b>Anticipated Environmental &amp; Social Impact</b>	<b>Proposed Mitigation Measures</b>	<b>Monitoring and Reporting Indicators</b>	<b>Implementation Plan and Institutional Responsibilities</b>	<b>Timing</b>
<b>1. Environmental Awareness Training</b>	<ul style="list-style-type: none"> <li>• Ensure that all persons involved in the project are aware of, and are familiar with the environmental requirements for the project.</li> <li>• Develop and implement environmental emergency preparedness procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Record of awareness training.</li> <li>• Record of attendance register of training.</li> </ul>	Contractor	Before construction/ Ongoing
<b>2. Health and Safety Aspect</b>	<ul style="list-style-type: none"> <li>• Ensure that all persons involved in the project are aware of, and are familiar with the environmental requirements for the project.</li> <li>• Establish personnel protection standards and mandatory safety practices and procedures for the field activities related to Corrective Actions at the site.</li> <li>• Establish the lines of communication among contractors and subcontractors involved in work operations for safety and health matters.</li> <li>• Conduct HIV /Aids Awareness Programme on Site for not less than 90% of workers inclusive of all direct and indirect costs. Provide and maintain condom dispenser.</li> <li>• Provide and maintain HIV/AIDS awareness posters.</li> <li>• Provide information regarding the voluntary testing of construction workers and counselling, support and care.</li> </ul>	<ul style="list-style-type: none"> <li>• Record of health and safety plan</li> </ul>	Contractor	Before construction/ Ongoing
<b>3. Dust Pollution and Air Quality</b>	<ul style="list-style-type: none"> <li>• Ensure measures are in place to minimise dust generated by Upgrading activities, to the satisfaction of the EM and ECO.</li> <li>• Avoid excavation, handling and transport of materials which may generate dust under high wind conditions.</li> <li>• Locate stockpiles of construction materials in sheltered areas where they are not exposed to erosive effects of the wind.</li> <li>• Use appropriate dust suppression measures when dust generation is unavoidable, e.g. dampening with water, particularly during prolonged periods of dry weather.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of disturbances outside designated area;</li> <li>• Evidence of disturbances to vegetation or property outside designated area.</li> </ul>	Contractor	Ongoing

Anticipated Environmental & Social Impact	Proposed Mitigation Measures	Monitoring and Reporting Indicators	Implementation Plan and Institutional Responsibilities	Timing
	<ul style="list-style-type: none"> <li>• Control dust on site roads through wet suppression.</li> <li>• Ensure all vehicle, plant and equipment are in good condition.</li> <li>• Encourage reduction of engine idling.</li> </ul>			
<b>4. Noise Impact</b>	<ul style="list-style-type: none"> <li>• Ensure the use of construction vehicles and equipment that emit reduced noise levels.</li> <li>• Ensure proper maintenance is conducted on vehicles to ensure the reduction of noise emission.</li> <li>• The construction staff should be equipped with ear protection equipment. Audio equipment (if any) should not be played at levels considered intrusive by others. Construction activities will be limited to a period between 07h00 and 19h00.</li> </ul>	<ul style="list-style-type: none"> <li>• Regular visual inspections.</li> <li>• Evidence of no excessive noise.</li> </ul>	Contractor	Ongoing
<b>5. Contamination of Groundwater</b>	<ul style="list-style-type: none"> <li>• Prevent spillages of any chemicals and petroleum products (i.e. oils, lubricants, petrol and diesel). Use drip trays, linings or concrete floors when evidence of leaks are observed on vehicles or equipment.</li> <li>• No major servicing and maintenance of vehicles and/or equipment should be conducted at the site.</li> <li>• All fuelling, storage and chemical handling should be conducted on surfaces provided for this purpose. Drip trays, linings or concrete floors must be used when removing oil from machinery.</li> <li>• Spillage control procedures must be in place according to relevant SANS standards or better. Waste water collection systems should be connected to these systems.</li> <li>• Should temporary toilet facilities be necessary, adequate containment systems should be erected at the site for use during the construction phase.</li> <li>• Waste should properly be contained to avoid any leakages and/or spillages, and should regularly be disposed of at a suitable sewage disposal site. Run-off from these toilets due to overflows should be avoided at all cost.</li> </ul>	<ul style="list-style-type: none"> <li>• Daily and weekly, records of remediation.</li> <li>• Visible contaminants from trucks and equipment;</li> <li>• Evidence that leaking equipment decommissioned;</li> <li>• Evidence of soil and water contamination.</li> </ul>	Contractor	Construction phase

Anticipated Environmental & Social Impact	Proposed Mitigation Measures	Monitoring and Reporting Indicators	Implementation Plan and Institutional Responsibilities	Timing
	<ul style="list-style-type: none"> <li>• Proper environmental awareness and remedial response training of operators must be conducted on a regular basis.</li> </ul>			
<b>6. Soil and Surface Water Contamination</b>	<ul style="list-style-type: none"> <li>• Prevent contamination of soil and surface water through oil leakages, hydrocarbon fuel, lubricants and grease from the construction vehicles and equipment during construction phase.</li> <li>• Spillage control procedures must be in place according to relevant SANS standards or better.</li> <li>• Drip trays and/or plastic sheeting should be used to contain any leaks emanating from the construction plant.</li> <li>• Any spillage of hazardous substances including fuel, oil, paint or cleaning solvent must be cleaned up immediately and disposed of at a designated disposal facility.</li> <li>• Prevent discharge of any pollutants, such as cements, concrete, lime, chemicals, and hydrocarbons into nearby water courses.</li> <li>• Prevent illegal washing out of containers in water courses. Properly secure all temporary / portable toilets (if any) to the ground to prevent them toppling due to wind or any other cause.</li> <li>• Maintain toilets in a hygienic state and remove waste to a licensed disposal facility.</li> <li>• Ensure that no spillages occur when the toilets are cleaned or emptied. Prohibit urination on site, other than at designated facilities.</li> <li>• Contain contaminated water from batching operations and allow sediments to settle before being disposed of as waste water. Stabilise cleared areas as soon as possible to prevent and control surface erosion.</li> <li>• Proper environmental awareness and remedial response training of operators must be conducted on a regular basis.</li> </ul>	<ul style="list-style-type: none"> <li>• Daily and weekly, records of remediation.</li> <li>• Visible contaminants from trucks and equipment;</li> <li>• Evidence that leaking equipment decommissioned;</li> <li>• Evidence of soil and water contamination.</li> </ul>	Contractor	Construction phase

Anticipated Environmental & Social Impact	Proposed Mitigation Measures	Monitoring and Reporting Indicators	Implementation Plan and Institutional Responsibilities	Timing
	<ul style="list-style-type: none"> <li>An emergency plan should be in place on how to deal with spillages and leakages during this phase.</li> </ul>			
7. Generation of Waste	<ul style="list-style-type: none"> <li>Ensure that sufficient weather- and vermin- proof bins / containers are present on site for the disposal of solid waste. Waste and litter generated during this phase must be placed in these disposal bins.</li> <li>The Contractor shall institute a waste control and removal system for the site.</li> <li>No disposal of /or burying of waste on site should be conducted.</li> <li>No waste should be burned on site. Empty bins regularly as required.</li> <li>Separate hazardous wastes from general waste, clearly marked, and stored in appropriate containers.</li> <li>Solid and liquid hazardous waste shall be stored in separate containers.</li> <li>The hazardous waste storage is to be clearly marked to indicate the presence of hazardous substances, and the protocols associated with handling of such hazardous wastes shall be known by all relevant staff members.</li> <li>Where no formal hazardous waste disposal facility exists, any contaminated soil produced should be contained, transported and disposed of at the nearest approved Hazardous waste site; or a controlled bioremediation facility should be developed.</li> <li>Awareness of the hazardous nature of various types of waste should be enforced.</li> </ul>	<ul style="list-style-type: none"> <li>Evidence of littering,</li> <li>Evidence of adequate waste disposal containers; Amount of recyclable material;</li> <li>Number of incidents of unauthorised entry.</li> </ul>	Contractor	Ongoing
8. Traffic	<ul style="list-style-type: none"> <li>Install and maintain official traffic signalling (where necessary) on local roads / intersections surrounding the project location in conjunction with local or national traffic regulations.</li> </ul>	<ul style="list-style-type: none"> <li>Adequate traffic signage.</li> <li>Evidence of traffic congestion</li> </ul>	Contractor	Construction phase

Anticipated Environmental & Social Impact	Proposed Mitigation Measures	Monitoring and Reporting Indicators	Implementation Plan and Institutional Responsibilities	Timing
	<ul style="list-style-type: none"> <li>• Speed limit warning signs must be erected to minimise accidents.</li> <li>• Construction vehicles and machinery must be tagged with reflective signs or tapes to maximise visibility and avoid accidents.</li> <li>• Where feasible, Construction vehicles should not travel to and from the site during peak times (07h00 to 09h00 and 16h00 to 18h00), to minimise impacts on traffic.</li> <li>• Construction vehicles should not be allowed to obstruct the road, hence no stopping in the road, wholly or partially, but rather pull off the road or park on the roadside.</li> </ul>			
9. Safety and Security	<ul style="list-style-type: none"> <li>• Display telephone numbers of emergency services, in the at project location.</li> <li>• Provide suitable emergency and safety signage on site (manufactured of durable, weatherproof material).</li> <li>• Demarcate and barricade any areas which may pose a safety risk (including hazardous substances, deep excavations etc). These notices must be worded in the</li> <li>• Enforce the use of appropriate Personal Protective Equipment (PPE) for the right task or duties at all times.</li> <li>• Prevent illegal access to the construction sites by implementing appropriate security measures. These security measures must not pose a threat to surrounding communities.</li> <li>• Should a construction camp be necessary, it should be located in such a way that it does not pose a risk to the public.</li> <li>• Equipment housed on site must be placed in a way that does not encourage criminal activities.</li> <li>• For safety and security reasons it is recommended that the entire site (construction site and camp) be fenced-off and security personnel be employed to safeguard the premises and to avert criminal activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Evidence of signage in place.</li> <li>• Evidence of personnel using construction machinery or equipment possessing appropriate PPE.</li> </ul>	Contractor	Construction phase



Anticipated Environmental & Social Impact	Proposed Mitigation Measures	Monitoring and Reporting Indicators	Implementation Plan and Institutional Responsibilities	Timing
	<ul style="list-style-type: none"> <li>• Sensitize operators of earthmoving equipment and tools to switch off engines of vehicles or machinery not being used.</li> <li>• The contractor is advised to ensure that the team is equipped with first aid kits and that they are available on site, at all times.</li> <li>• Proper barricading and/or fencing around the work sites should be erected to avoid entrance of animals and/or unauthorized persons.</li> <li>• Safety regulatory signs should be placed at strategic locations to ensure awareness.</li> <li>• Adequate lighting within and around the construction locations should be erected, when visibility becomes an issue.</li> </ul>			
<b>10. Erosion and Sedimentation</b>	<ul style="list-style-type: none"> <li>• Avoid unnecessary removal of topsoil cover during construction.</li> <li>• Ensure stockpiles are located within the boundary of the site and are protected from erosion.</li> <li>• Stabilise cleared areas as soon as possible to prevent and control surface erosion.</li> <li>• Limit clearing of vegetation to those areas within the footprint of construction.</li> <li>• Minimise open areas and reduce the frequency of disturbance.</li> </ul>	<ul style="list-style-type: none"> <li>• Evidence of proper stockpiling and management.</li> <li>• Evidence of surface erosion.</li> <li>• Evidence of surface erosion.</li> <li>• Number of disturbances outside designated.</li> </ul>	Contractor	Construction phase
<b>11. Ecological</b>	<ul style="list-style-type: none"> <li>• Limit clearing of vegetation to those areas within the footprint of construction, minimise open areas and reduce the frequency of disturbance.</li> <li>• Big trees and protected trees (i.e. Camel thorn (Acacia Erioloba), Marula trees (Sclerocaryabirrea), Mopani trees) present at the project site should be conserved and incorporated into the development.</li> <li>• Disturbance of areas outside the designated working zone is not allowed.</li> </ul>	<ul style="list-style-type: none"> <li>• Evidence of conservation;</li> <li>• Number of disturbances outside designated.</li> </ul>	Contractor	Construction phase

Anticipated Environmental & Social Impact	Proposed Mitigation Measures	Monitoring and Reporting Indicators	Implementation Plan and Institutional Responsibilities	Timing
<b>12. Socio-Economic Aspect</b>	<ul style="list-style-type: none"> <li>Construction contractors should be sourced from the local community, or region at large (where feasible).</li> <li>Construction workers should be sourced from the local community (where feasible). Suppliers of construction materials should be sourced from or region at large (where feasible).</li> <li>Locally source services required during the construction process, such as securities, rental of portable toilets, plant hire, etc.</li> <li>Usage of local services such water, electricity, removal of rubbles etc shall be on contractors account.</li> <li>Designate an area outside the construction site for informal traders (if any), to allow them to trade.</li> </ul>	<ul style="list-style-type: none"> <li>Evidence of local contractors.</li> <li>Evidence of local construction workers</li> <li>Evidence of local suppliers and service providers</li> </ul>	Contractor	Construction phase
<b>OPERATION AND MAINTENANCE PHASE</b>				
<b>(a) Dust Pollution and Air Quality</b>	<ul style="list-style-type: none"> <li>Acquire all reasonable measures to minimise dust generated by operational activities.</li> <li>Avoid handling and transporting of materials which may generate dust under high wind conditions or when a visible dust plume is present.</li> <li>Appropriate dust suppression measures should be deployed when dust generation is unavoidable, e.g. dampening with water (wet suppression.), particularly during prolonged periods of dry weather.</li> <li>Ensure all vehicle, plant and equipment are in good condition. Promote the reduction of engine idling at the project site.</li> </ul>	<ul style="list-style-type: none"> <li>Visible dust plumes.</li> <li>Visible wind erosion.</li> <li>Regular visual inspections of air quality at site.</li> <li>Evidence of vehicles idling too long.</li> </ul>	School Management	Operational phase
<b>(b) Noise Impact</b>	<ul style="list-style-type: none"> <li>Ensure the use of operational vehicles, equipment and machines that emit reduced noise levels, compatible with the most recent environmental standards.</li> <li>Ensure proper maintenance is conducted on vehicles to ensure the reduction of noise emission.</li> <li>Where necessary, workers should be equipped with ear</li> </ul>	<ul style="list-style-type: none"> <li>Record of noise complaints.</li> <li>Evidence of no excessive noise.</li> <li>Records of grievance procedure.</li> </ul>	School Management	Operational phase

Anticipated Environmental & Social Impact	Proposed Mitigation Measures	Monitoring and Reporting Indicators	Implementation Plan and Institutional Responsibilities	Timing
	<p>protection equipment.</p> <ul style="list-style-type: none"> <li>• Daily maintenance activities should be limited to 07H00 - 19H00 (where feasible).</li> <li>• Utilise stringent vehicle and equipment noise specifications.</li> <li>• Perform appropriate and timeously maintenance of equipment and vehicles.</li> </ul>			
<b>(c) Contamination of Groundwater</b>	<ul style="list-style-type: none"> <li>• Ensure compliance to the maintenance and service plans of project sites' vehicles and equipment.</li> <li>• All leaks should be properly contained and repaired immediately. Leaking equipment should be removed from the work area to a designated containment area, which should be equipped with a waste water collection system.</li> <li>• Equipment and materials to deal with spill clean-up must be readily available on site and staff must be trained as to how to use the equipment and briefed about reporting procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Records of vehicle maintenance.</li> <li>• Record visible contaminants from vehicles and equipment.</li> </ul>	School Management	Operational phase
<b>(d) Contamination of Surface water</b>	<ul style="list-style-type: none"> <li>• Ensure that storm water management systems are regularly maintained and tested, and are in good working order.</li> <li>• Ensure compliance to the maintenance and service plans of project sites' vehicles and equipment.</li> <li>• All leaks should be properly contained and repaired immediately.</li> <li>• Leaking equipment should be removed from the work area to a designated containment area, which should be equipped with a waste water collection system.</li> <li>• Equipment and materials to deal with spill clean-up must be readily available on site and staff must be trained as to how to use the equipment and briefed about reporting procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Regular visual inspections of storm water channels.</li> <li>• Evidence of no leakages or pollution from storm water ways.</li> </ul>	School Management	Operational phase
<b>(e) Generation of Waste</b>	<p>Ensure sufficient weather- and vermin- proof bins / containers are present along campus corridors, at sports grounds, lecture halls, and residences. MoEAC, NTA and UNAM must ensure the presence of waste skips around the project locations. Ensure</p>	<ul style="list-style-type: none"> <li>• Evidence of waste management.</li> <li>• Evidence of no litter in and around the site.</li> </ul>	School Management	Operational phase

<b>Anticipated Environmental &amp; Social Impact</b>	<b>Proposed Mitigation Measures</b>	<b>Monitoring and Reporting Indicators</b>	<b>Implementation Plan and Institutional Responsibilities</b>	<b>Timing</b>
	waste removal from site is done timeously. Implement measures to manage litter from the project site. (e.g. cover waste in windy conditions). Regularly clear windblown litter that gathers along project site or beyond. Dispose of any hazardous waste generated at an approved hazardous waste site. Awareness of the hazardous nature of various types of waste should be enforced.			
<b>(f) Traffic</b>	Speed limits and road signs as set out by national traffic regulations should be adhered to in order to minimise accidents.	*Evidence of no congestion or traffic accidents.	School Management	Operational phase
<b>(g) Safety and Security</b>	Display contact details of emergency services in the area at strategic locations of the project site. Demarcate and place signage on any areas which may pose a safety risk (including trenches, excavations etc). The project personnel are advised to ensure that proper personal protective gear and first aid kits are available, at all times. Project personnel should be properly trained in first aid and safety awareness.	*Evidence of signage in place. *Evidence of use of appropriate PPE for specific tasks.	School Management	Operational phase

## **Objectives and Legal Obligation**

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### **OBJECTIVE OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN**

The objective of the Environmental and Social Management Plan is to describe mitigation, monitoring and institutional measures to be taken during project implementation to eliminate adverse impacts, offset them, or reduce them to acceptable levels.

### **Legal Obligation**

This Environmental and Social Management Plan is legally binding in terms of the mentioned Acts and Ordinances, in terms of the Construction Contract as signed by the relevant parties.

The following order of precedence of documents will apply:

- *General Conditions of Contract*
- *Contract Document*
- *Environmental Management Plan*

All responsibilities, procedures for correcting non-compliance, penalties, and fines prescribed in this document apply to the Environmental and Social Management Plan.

## **Responsibilities and monitoring program**

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Copies of this ESMP shall be kept at the site office and will be distributed to all senior contract personnel. All senior personnel shall be required to familiarize themselves with the contents of this document. The implementation of this ESMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during each phase.

### **The Project Environmental Consultant/Specialist**

The Project has contracted a part-time Environmental Specialist who will assist the Project with the monitoring of compliance with the ESMP and other national and AfDB legislation and regulations. With the commencement of the project, a basic assessment was conducted by the environmental and social consultant. During this assessment, the physical and social environment was also evaluated at every site after which the generic ESMP will be adapted to accommodate issues identified during the site visits.

The Project Environmental Specialist will be responsible for liaising between the project site, community and the Ministry of Education, Arts and Culture. During the site visits to each project i.e. bidder's clarification meeting and or during the site handover in some cases, an introductory meeting was held with each of the affected communities during which a representative committee was suggested to be elected and the contractor introduced to the community, the school and the contractor.

The Environmental Specialist will be responsible for periodic monitoring and evaluation of ESMP implementation. The management and continuous monitoring of the implementation of the ESMP will be the responsibility of the Health and Safety personnel on site.

### **Principal Agent (PA)**

The Principal Agent will be responsible for supervising the contractor on any environmental and social matters on site. The Principal Agent shall assist the Project Implementation Unit where necessary and will have the following responsibilities in terms of the implementation of this ESMP:

- Ensuring that the necessary environmental authorizations and permits have been obtained by the Contractor.
- Assisting the Contractor in finding environmentally responsible solutions to problems with input from the Environmental Health and Safety Officer where necessary.
- Ordering the removal of person(s) and/or equipment not complying with the ESMP specifications.
- Issuing fines for transgressions of site rules and penalties for contravention of the ESMP.
- Providing input into the Environmental Health and Safety's ongoing internal review of the ESMP, this review report is monthly submitted to the Employer through the Project Manager.

### **Environmental, Health and Safety Control Officer (EHSCO)**

The Environmental, Health and Safety Control Officer (EHSCO) will be a competent person determined by the RE to fulfil the role as the Employer's representative to monitor and review the on-site environmental management and implementation of this ESMP by the Contractor.

Since a fulltime EHSCO will not be available, the Project Manager will fulfil the function of the EHSCO thereby taking responsibility of the EHSCO's duties. The EHSCO's duties will include the following:

- Assisting the Project Manager in ensuring that the necessary environmental authorizations and permits have been obtained.
- Maintaining open and direct lines of communication between the Project Manager, Employer, Contractor, Community Committee and I&APs with regard to environmental and social matters.
- Convening and facilitating public meetings.

- Regular site inspections of all construction areas with regard to compliance with the ESMP.
- Monitoring and verifying adherence to the ESMP monitoring and verifying that environmental impacts are kept to a minimum.
- Taking appropriate action if the specifications are not followed.
- Assisting the Contractor in finding environmentally responsible solutions to problems.
- Monitoring the undertaking by the Contractor of environmental awareness training for all new personnel coming onto site.
- Advising on the removal of person(s) and/or equipment not complying with the specifications via the Project Manager.
- Recommending the issuing of fines for transgressions of site rules and penalties for contraventions of the ESMP, via the Project Manager.
- Auditing the implementation of the ESMP, and compliance with authorization on a monthly basis.
- Undertaking a continual review of the ESMP, and recommending additions and/or changes to the document.

### **The Contractor**

The contractor shall be responsible for the implementation of the ESMP and the action plan, onsite monitoring and evaluation of the ESMP. The Contractor shall furthermore ensure that adequate environmental awareness training of senior site personnel takes place and that all construction workers receive an induction presentation on the importance and implications of the ESMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice.

As a minimum, training should include:

- Explanation of the importance of complying with the ESMP.
- Discussion of the potential environmental and social impacts of construction activities.
- The benefits of improved personal performance.
- Employees' roles and responsibilities, including emergency preparedness.



- Explanation of the mitigation measures that must be implemented when carrying out their activities.
- Explanation of the specifics of this ESMP and its specification (no-go areas, etc.)
- Explanation of the management structure of individuals responsible for matters pertaining to the ESMP.
- The contractor shall keep records of all environmental training sessions, including names, dates and the information presented.

## **PROCEDURES FOR CORRECTING NON-COMPLIANCE**

The Contractor shall comply with the environmental specifications and requirements on an ongoing basis and any failure on his/her part to do so will entitle the Project Manager to impose a penalty. This applies to the Environmental and Social Management Plan (ESMP).

In the event of non-compliance, the following recommended process shall be followed:

- The Project Manager shall issue a notice of non-compliance to the Contractor, stating the nature and magnitude of the contravention. A copy shall be provided to the EHSCO.
- The Contractor shall act to correct the non-conformance within 24 hours of receipt of the notice, or within a period that may be specified within the notice.
- The Contractor shall provide the Project Manager with a written statement describing the actions to be taken to discontinue the non-conformance, the actions taken to mitigate its effects and the expected results of the actions. A copy shall be provided to the EHSCO.
- In the case of the Contractor failing to remedy the situation within the predetermined time frame, the Project Manager shall impose a monetary penalty based on the conditions of contract.
- In the case of the Contractor being unable to remedy the situation due to permanent environmental damage already incurred, the Project Manager shall impose a monetary penalty based on the conditions of contract.
- In the case of non-compliance giving rise to physical environmental damage or destruction, the Project Manager shall be entitled to undertake or to cause to be undertaken such remedial works as may be required to make good such damage and to recover from the Contractor the full costs incurred in doing so.

- In the event of a dispute, difference of opinion, etc. between any parties in regard to or arising out of interpretation of the conditions of the ESMP, disagreement regarding the implementation or method of implementation of conditions of the ESMP, etc. any party shall be entitled to require that the issue be referred to independent adjudicator for determination.
- The Project Manager shall at all times have the right to stop work and/or certain activities on site in the case of ESMP non-compliance or failure to implement remediation measures.

## **Fines and penalties**

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*The following fines and penalties are in place for transgressions listed below. It will be issued after the procedure in 4.1 has been duly followed and only in severe cases and after repeated non-compliance. The graveness of the transgression is justified by each specific penalty. This applies to the Environmental Management Plan.*

### **FINES**

Fines may be issued per incident at the discretion of the Project Manager. Such fines will be issued in addition to any remedial costs incurred as a result of noncompliance with the ESMP. The Project Manager will inform the Contractor of the contravention and the amount of the fine, and will deduct the amount from monies due under the Contract.

Fines for the activities detailed below, will be imposed by the Project Manager on the Contractor and/or his Subcontractors.

Any persons, vehicles, plant, or thing related to the Contractors operations within the designated boundaries of a “no-go” area.	N\$2,000
Any vehicle guilty of reckless driving on and in the vicinity of the site, including excessive speeds.	N\$1,000
Any vehicle being driven and items of plant or materials being parked or stored outside the demarcated boundaries of the site.	N\$2,000
Persons repeatedly walking outside the demarcated boundaries of the site.	N\$1,000
Persistent and un-repaired spilling of hazardous materials and materials causing pollution.	N\$3,000
Persistent littering on site.	N\$500
Individuals repeatedly not making use of the designated toilet facilities.	N\$200
Disposal of waste other than agreed on in the waste management plan.	N\$5,000
Deliberate lighting of illegal fires on site (e.g. outside of the designated camp site).	N\$2,000

For each subsequent similar offence, the fine may, at the discretion of the RE, be doubled in value to a maximum value of N\$10,000.

The RE shall be the judge as to what constitutes a transgression in terms of this document.

## **PENALTIES**

Where the Contractor inflicts non-repairable damage upon the environment or fails to comply with any of the environmental specifications, he shall be liable to pay a penalty fine over and above any other contractual consequence.

The Contractor is deemed NOT to have complied with this Specification if:

- within the boundaries of the site, site extensions and haul/ access roads there is evidence of contravention of the Specification;
- environmental damage due to negligence;
- Safety of contractor personnel and public being compromised due to negligence;
- the Contractor fails to comply with corrective or other instructions issued by the Engineer within a specific time;
- the Contractor fails to respond adequately to complaints from the public; and
- Payment of any fines in terms of the contract shall not absolve the offender from being liable from prosecution in terms of any law.

The Project Manager will be responsible for a Report on the non-repairable damage and / or non-compliance with visual and other evidence as well as issuing the penalty to the contractor with the report attached. A copy must be handed to the Project Environmental Specialist.

The following penalties are suggested for transgressions:

<i>Actions leading to erosion:</i>	A penalty equivalent in value to the cost of rehabilitation plus 20%.
<i>Oil spills:</i>	A penalty equivalent in value to the cost of clean-up operation plus N\$1,000.
<i>Damage to indigenous vegetation:</i>	A penalty equivalent in value to the cost of restoration plus N\$2,000.
<i>Damage to trees:</i>	A penalty to a maximum of N\$5,000 shall paid for each tree removed without prior permission, or a

maximum of N\$2,000 for damage to any tree, which is to be retained on site.

*Damage to indigenous vegetation:*

A penalty equivalent in value to the cost of restoration operation plus N\$2,000.

*Damage to sensitive environment:*

A penalty equivalent in value to the cost of restoration operation plus 20%.

*Damage to cultural sites:*

A penalty to a maximum of N\$100,000 shall be paid for any damage to any cultural historical site.

*Damage to natural fauna:*

A penalty to a maximum of N\$2,000 for damages to any natural occurring animal.

*Accident due to safety negligence:*

A penalty to a maximum of N\$50,000 for injuries to personnel or public.